

## NONREDUNDANT SPLIT/POOL SYNTHESIS OF COMBINATORIAL LIBRARIES

### ABSTRACT OF THE DISCLOSURE

5           The present invention includes methods for generating combinatorial  
libraries on solid phase supports in which increased productivity is achieved by pooling  
all common steps in synthesis without using a tracking or coding system to record the  
synthetic history of each compound. Methods for generating combinatorial libraries in  
which containers with random mixtures of solid phase particles are divided and  
10 combined together in non-random ways without the exchange of particles between  
containers are also provided. Various products are optionally produced in multi-stage  
syntheses according to the invention, such as oligomers and synthetic non-repetitive  
organic molecules. The methods additionally relate to the identification of each library  
component without adding extra synthetic, physical, optical, or electronic encoding  
15 steps during library synthesis. Combinatorial synthetic systems are also provided.

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